



Rotavirus infections and climate variability in Dhaka, Bangladesh: A time-series analysis

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Abstract:

Attempts to explain the clear seasonality of rotavirus infections have been made by relating disease incidence to climate factors; however, few studies have disentangled the effects of weather from other factors that might cause seasonality. We investigated the relationships between hospital visits for rotavirus diarrhoea and temperature, humidity and river level, in Dhaka, Bangladesh, using time-series analysis adjusting for other confounding seasonal factors. There was strong evidence for an increase in rotavirus diarrhoea at high temperatures, by 40.2% for each 1 °C increase above a threshold (29 °C). Relative humidity had a linear inverse relationship with the number of cases of rotavirus diarrhoea. River level, above a threshold (4.8 m), was associated with an increase in cases of rotavirus diarrhoea, by 5.5% per 10-cm river-level rise. Our findings provide evidence that factors associated with high temperature, low humidity and high river-level increase the incidence of rotavirus diarrhoea in Dhaka. © 2007 Cambridge University Press.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Extreme Weather Event, Food/Water Quality, Meteorological Factors, Precipitation, Temperature

Extreme Weather Event: Flooding

Food/Water Quality: Pathogen

Temperature: Fluctuations

Geographic Feature:

resource focuses on specific type of geography

Urban

Geographic Location:

resource focuses on specific location

Non-United States

Climate Change and Human Health Literature Portal

Non-United States: Asia

Asian Region/Country: Other Asian Country

Other Asian Country: Bangladesh

Health Impact: ☒

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Foodborne/Waterborne Disease

Foodborne/Waterborne Disease: Rotavirus

Population of Concern: A focus of content

Population of Concern: ☒

populations at particular risk or vulnerability to climate change impacts

Children

Resource Type: ☒

format or standard characteristic of resource

Research Article

Timescale: ☒

time period studied

Time Scale Unspecified